答　弁　書

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4．通知の日付　　１７．０８．２００４

5．答弁の内容

（１）本願請求の範囲第１項の進歩性について：

文献１は、プーリ部がU字断面を有しているだけであって、このプーリ部がハブ部にスプリングによる摩擦接続されていることからも、プーリを有するカップリング製品であり、回転脈動を防振する所謂トーショナルダンパではない。

本発明（請求項１）のトーショナルダンパは動吸振器であるから、本発明のダンパマス部として機能するプーリ部には、防振すべき振動系に適応する慣性質量、すなわち共振周波数に合致する慣性質量が必要であるのに対し、文献１はカップリングであるから、文献１には当該U字部に慣性質量体を固定する思想はない。

文献２は、所謂ビスカスダンパーであって、環状ケースに慣性質量体を粘性液とともに密閉し、慣性質量体とケースとの回転作動を減衰液の粘性抵抗によって減衰すること、ねじり振動を防振するものである。従って、本発明のように動吸振器による防振機構ではないから、動吸振器のように共振周波数に合致させるという必要はなく、容積や重量が許すならば慣性質量は大きい方がよく、本発明の動吸振器を利用したトーショナルダンパとは異なる。

以上から、文献１に文献２を合わせても、本発明（請求項１）の思想については、開示も示唆もない。したがって、本願発明は、引用文献１、２からは容易に得ることができないと思料する。

（２）本願請求項１に記載の発明が引用文献に対し特許性があれば、本願請求項１の従属項に記載の発明も、当然特許性を有する。本願の従属項のうち幾つかについて言及すればつぎの通りである。

本願請求項３の進歩性について：

・文献３には、リング片の結合方法として、係合用膨出片の基部の一方に凹部を、前記膨出片を嵌め込む穴の開口端の対応する側に該凹部と嵌り合う凸部を形成したものの記載がある。

しかしながら、文献３における凹部および凸部は、膨出片と同じ形状となっており、リング片の結合にあたっては、当然に両方のリング片の穴側は同様に広がろうとするはずであり、これを防止するという思想はない。

これに対して、本発明（請求項３）においては、前記凸部および凹部によって、膨出片と穴の締まりばめの際、穴が膨出片により押し広げられても、穴の基部の凸部と膨出片の基部の凹部の嵌め合い部の箇所で変形を押さえ込んで吸収するため、発想が全く異なるものである。

以上

Amendment

(Amendment under Rule 11)

To: Seiko Fujimura, Examiner, Patent Office

1. Indication of International Application

PCT/JP03/06889

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4. Object of Amendment

Claims

5. Contents of Amendment

(1) In Page 14, Claim 1, to amend "said concave portion." to -- said concave

portion, wherein said inertia mass element is comprised of a laminate of annular plates which is formed by bonding arc-shaped ring pieces in a circumferential direction and a width direction. --.

(2) In Page 14, to delete Clime 2

(3) In Page 14, Claim 3, to amend "adjacent ring pieces." to --adjacent ring pieces, wherein a concave portion is formed at both sides of a base portion of said protruded piece of said ring piece, and a protruded portion fitted in the concave portion is formed at an open end of said hole, and when the protruded piece of one of said ring pieces adjacent in a circumferential direction is close-fitted into the hole of the other one of said adjacent ring pieces, the concave portion of the base portion of said protruded piece is close-fitted into the protruded portion of said hole.--.

(4) In page 14, to delete Claim 4

(5) In page 14, to delete Claim 5

(6) In page 14, Claim 6, to amend "Claim 2 to 4" to --Claim 1 or 3--.

(7) In pages 14 and 15, Claim 8, to amend "Claim 2 to 7" to --Claim 1, 3, 6, 7--.

(8) In page 15, Claim 9, to amend "Claim 2 to 8" to --Claim 1, 3 , 6 to 8.

(9) In page 15, Claim 10, to amend "Claim 2 to 8" to --Claim 1, 3, 6 to 8--.

(10) In page 15, Claim 11, to amend "Claim 2 to 8" to --Claim 1, 3, 6 to 8--.

(11) In Page 15, Claim 12, to amend "Claim 1 to 8" to --Claim 1, 3, 6 to 8--.

(12) In Page 15, Claim 13, to amend "Claim 1 to 12" to --Claim 1, 3, 6 to 12--.

(13) In Pages 15 and 15/1, Claim 14, to amend "Claim 1 to 13" to --Claim 1, 3, 6 to 13--.

(14) In Page 15/1, Claim 15, to amend "Claim 1 to 14" to --Claim 1, 3, 6 to 14--.

6. List of Document Attached

(1) Pages 14, 15, and 15/1

CLAIMS

1. (Amended) A torsional damper pulley comprising a hub fixed at a revolving shaft of an internal combustion engine, an annular pulley body substantially rectangular in section, which is coaxially placed outside said hub in its diameter direction, has a pulley groove at an outer circumferential portion and has a predetermined inertia mass, and an elastic solid interposed between an outer circumferential surface of said hub and an inner circumferential surface of said pulley body, wherein said pulley body comprises an annular metallic frame substantially U-shaped in section, which has a concave portion open in its axial direction and has a pulley groove at an outer circumferential portion, and an annular inertia mass element fixed in said concave portion, wherein said inertia mass element is comprised of a laminate of annular plates which is formed by bonding arc-shaped ring pieces in a circumferential direction and a width direction.

2. (Deleted)

3. (Amended) The torsional damper pulley according to claim 2, wherein a protruded piece or a fitting hole fitted to the protruded piece is formed at one end of said ring piece, said hole or said protruded piece is formed at the other end

of said ring piece, and said ring pieces are bonded in a circumferential direction by close-fitting the protruded piece of one of ring pieces adjacent in a circumferential direction into the hole of the other one of the adjacent ring pieces, wherein a concave portion is formed at both sides of a base portion of said protruded piece of said ring piece, and a protruded portion fitted in the concave portion is formed at an open end of said hole, and when the protruded piece of one of said ring pieces adjacent in a circumferential direction is close-fitted into the hole of the other one of said adjacent ring pieces, the concave portion of the base portion of said protruded piece is close-fitted into the protruded portion of said hole.

4. (Deleted)

5. (Deleted)

6. (Amended) The torsional damper pulley according to any one of claim 1 or 3, wherein dowels protruded from one surface of said ring piece to the other surface are formed, and said ring pieces are bonded in a width direction by overlaying said ring pieces adjacent in a width direction so that the dowels are displaced in a circumferential direction and pressing them.

7. The torsional damper pulley according to claim 6, wherein a convex portion of said dowel is formed to be narrower than a concave portion.

8. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6, 7, wherein the annular plate is formed by bonding said ring pieces in a circumferential direction, and said laminate is formed by bonding a plurality of the annular plates in a width direction of said ring piece.

9. (Amended) The torsional damper pulley according to any one of claims 1 , 3, 6 to 8, wherein said inertia mass element comprises an annular plate having an inner diameter to be in pressure-contact with an inner surface of the inner circumferential wall for defining the concave portion of said pulley body, and said inertia mass element is fixed by being press-fitted into said concave portion.

10. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 8 wherein said inertia mass element comprises an annular plate having an outer diameter to be in pressure-contact with an inner surface of an outer circumferential wall for defining the concave portion of said

pulley body, and said inertia mass element is fixed by being press-fitted into said concave portion.

11. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 8, wherein said inertia mass element comprises a first annular plate having an outer diameter to be in pressure-contact with an inner surface of an outer circumferential wall for defining the concave portion of said pulley body, and a second annular plate having an inner diameter to be in pressure-contact with an inner surface of an inner circumferential wall for defining said concave portion, and said inertia mass element is fixed by being press-fitted into said concave portion.

12. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 8, wherein said inertia mass element is fixed to the concave portion of said pulley body with fastening means including a bolt.

13. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 12, wherein an adhesive and/or a resin are/is filled into the concave portion of said pulley body into which said inertia mass element is inserted.

14. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 13, wherein convex portions outward or inward in a diameter direction are provided at the same positions in a width direction of the outer circumferential portion of said hub and an inner circumferential wall for defining a concave portion of said pulley body.

15. (Amended) The torsional damper pulley according to any one of claims 1, 3, 6 to 14, wherein a wall portion for connecting an inner circumferential wall and an outer circumferential wall for defining the concave portion of said pulley body is omitted, whereby said concave portion is formed to be a through-hole open to both sides in an axial direction, said inertia mass element is formed by overlaying a plurality of annular plates on each other and bonding them so that at least one annular plate having an inner diameter and outer diameter to be in pressure-contact with said inner circumferential wall and outer circumferential wall is placed, and said inertia mass element is press-fitted into said through-hole.